

What is claimed is:

1. A heat storing element for use in a heat storage apparatus,
said heat storing element comprising:

5 a pair of inner and outer partition wall sections opposed
in substantial parallel relation to each other with a predetermined
distance therebetween, said inner and outer partition wall sections
each having a substantial vortex shape;

an inner connection section interconnecting respective one
10 ends of said inner and outer partition wall sections, said inner
connection section having a projected portion and a recessed
portion; and

an outer connection section interconnecting respective other
ends of said inner and outer partition wall sections, said outer
15 connection section having a projected and a recessed portion,
said heat storing element being produced by extrusion molding.

2. A heat storing element as claimed in claim 1 which further
comprises a plurality of ribs formed between opposed inner surfaces
20 of said inner and outer partition wall sections, and wherein each
of said ribs has a recess formed across a thickness thereof to
allow passage therethrough of fluid.

3. A method for manufacturing a heat storage apparatus,
25 comprising:

(a) a step of providing a plurality of heat storing elements
as recited in claim 1 or 2;

(b) a step of fitting the recessed or projected portion of the inner connection section of a first one of a given pair of said heat storing elements with the projected or recessed portion of a second one of the pair of said heat storing elements;

5 (c) a step of bonding together the portions, fitted by said step of (b), of the first and second heat storing elements in close contact with each other;

(d) a step of fitting the recessed or projected portion of the outer connection section of the first heat storing element
10 with the projected or recessed portion of the outer connection section of the second heat storing element;

(e) a step of bonding together the portions, fitted by said step of (d), of the first and second heat storing elements in close contact with each other; and

15 (f) a step of repeating the steps of (a) - (e) until said plurality of heat storing elements are joined together, to thereby provide a heat storage apparatus which has one or more heat-storing-material accommodating chambers defined in each of said heat storing elements and one or more fluid passageways for
20 passage therein of heat exchanging fluid, each of said fluid passageways being defined by a gap between the inner partition wall of one of said heat storing elements and the outer partition wall of another of said heat storing elements that adjoins the one heat storing element.

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4. A method as claimed in claim 3 wherein the steps (c) and (e) bond the fitted portions by brazing or bolt-and-nut fastening.